



**PRODUCT MANUAL FOR  
NEEM BASED EC CONTAINING AZADIRACHTIN  
ACCORDING TO IS 14300 : 1995**

This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure coherence of practice and transparency in operation of certification under Scheme-I of Bureau of Indian Standards (Conformity Assessment) Regulations, 2018 for various products. The document may also be used by prospective applicants desirous of obtaining BIS certification licence/certificate.

1.	<b>Product</b>	:	IS 14300 : 1995
	<b>Title</b>	:	Neem Based EC Containing Azadirachtin
	<b>No. of amendments</b>	:	03
2.	<b>Sampling Guidelines</b>		
a)	<b>Raw material</b>	:	No specific requirement
b)	<b>Grouping Guidelines</b>	:	Nil
c)	<b>Sample Size</b>	:	500 ml of samples, of each variety of declared Azadirachtin content to be drawn and to be sent to laboratory along with all the details as per cl.10 of IS 13487 for complete testing
3.	<b>List of Test Equipment</b>	:	Please refer Annex – A
4.	<b>Scheme of Inspection and Testing</b>	:	Please refer Annex - B
5.	<b>Possible tests in a day</b>	:	Cold Test Flash Point Emulsion Stability Azadirachtin Content Acidity/Alkalinity Aflatoxin Content
6.	<b>Scope of the Licence :</b>		
	Licence is granted to use Standard Mark as per IS 14300 : 1995 with the following scope		
	<b>Name of the product</b>	Neem Based EC Containing Azadirachtin	
	<b>Varieties</b>	% of azadirachtin content declared.	

**ANNEXURE –A**  
**TO PRODUCT MANUAL FOR**  
**NEEM BASED EC CONTAINING AZADIRACHTIN**  
**IS 14300 : 1995**

**LIST OF TEST EQUIPMENT**

**Major test equipment required to test as per requirements of Indian Standard**

Sl. No.	Test Equipment	Test used in with clause reference
1.	<ul style="list-style-type: none"> <li>• Glass container/Beaker with cork or stopper fitted with thermometer.</li> <li>• Stirrer</li> <li>• Water bath</li> <li>• Ice- cold water.</li> </ul>	Cold test Clause 3.2.2
2	<ul style="list-style-type: none"> <li>• Cleaning solvent</li> <li>• Coolant</li> <li>• Lubricant</li> <li>• Verification Liquids</li> <li>• Ignitor and pilot light gas</li> <li>• Flash point apparatus/Abel flash point apparatus consisting of test cup, cover assembly, heating vessel, heating device, flash detector, Stirrer.</li> <li>• Thermometers 2 (one for the oil cup of range; - 35°C to +70°C, and another for the water bath of the range; -30°C to +80°C),</li> <li>• Timing device</li> <li>• Barometer</li> <li>• External cooling bath</li> <li>• Test cup thermal insulating cap</li> <li>• Ethylene Glycol</li> </ul>	Flash point Clause 3.2.3
3	<ul style="list-style-type: none"> <li>• Beaker</li> <li>• Mohr type pipette/Dropping funnel</li> <li>• Glass rod (Dia- 4 to 6 mm)</li> <li>• Graduated cylinder</li> <li>• Standard hard water</li> </ul>	Emulsion stability Clause 3.2.4
4	<ul style="list-style-type: none"> <li>• High Performance liquid Chromatography unit equipped with ultraviolet (UV) detector and printer-plotter-cum-integrator.</li> <li>• Micro syringe 25 µl capacity</li> <li>• Volumetric Flasks 10ml, 50ml and 100ml</li> <li>• Pipettes-graduated, 2ml</li> </ul>	Azadirachtin content Clause 3.3.1

	<p>and 5ml.</p> <ul style="list-style-type: none"> <li>• Acetonitrile HPLC grade</li> <li>• Water HPLC grade</li> <li>• Methanol HPLC grade</li> <li>• Analytical balance</li> </ul>	
5	<ul style="list-style-type: none"> <li>• Methyl red indicator solution</li> <li>• Bromocresol purple indicator solution</li> <li>• Standard sodium hydroxide solution</li> <li>• weighing balance</li> <li>• Standard hydrochloric acid</li> <li>• Conical flask, Volumetric Flasks, burettes and Pipettes</li> <li>• Methyl alcohol</li> <li>• Sodium hydroxide</li> <li>• Hydrochloric acid</li> <li>• pH meter</li> <li>• Buchner funnel</li> </ul>	Acidity/Alkalinity Clause 3.3.2
6	<ul style="list-style-type: none"> <li>• Chloroform</li> <li>• Methanol</li> <li>• Silica gel column</li> <li>• Thin layer Chromatography</li> </ul>	Aflatoxin content Clause 3.3.3

**List above is only indicative and may not be taken as exhaustive.**

**ANNEX -B**  
**SCHEME OF INSPECTION AND TESTING**  
**FOR NEEM BASED EC CONTAINING AZADIRACHTIN**  
**ACCORDING TO IS 14300 : 1995**

**1. LABORATORY** - A laboratory shall be maintained which shall be suitably equipped (as per the requirement given in column 2 of Table 1) and staffed, where different tests given in the specification shall be carried out in accordance with the methods given in the specification.

1.1 The manufacturer shall prepare a calibration plan for the test equipments.

**2. TEST RECORDS** –The manufacturer shall maintain test records for the tests carried out to establish conformity.

**3. PACKING AND MARKING**–The Standard Mark, as given in the Schedule of the licence, shall be stenciled/printed on each container of Neem Based EC Containing Azadirachtin or printed on the label applied to it, as the case may be, provided always that the material in each container to which this mark is thus applied, conform to every requirement of the specification.

3.1 Packing and marking shall be done as per the provision of clause 4 and 5 of the Indian Standard. In addition, the following details shall be mentioned on each container legibly and indelibly:

a) BIS Licence No. CM/L \_\_\_\_\_.

b) BIS website details i.e –“For details of BIS certification please visit [www.bis.gov.in](http://www.bis.gov.in)”.

**4. CONTROL UNIT** – For the purpose of this scheme, the total quantity of material processed and formulated in a mixer shall constitute a control unit.

**5. LEVELS OF CONTROL** - The tests as indicated in column 1 of Table 1 and the levels of control in column 3 of Table 1, shall be carried out on the whole production of the factory which is covered by this plan and appropriate records maintained in accordance with paragraph 2 above.

5.1 All the production which conforms to the Indian Standards and covered by the licence should be marked with Standard Mark.

5.2 On the basis of tests and analysis reports, the decision regarding conformity or otherwise of the control unit to a given requirement shall be made as follows:

5.2.1 The sample taken for test from the control unit shall satisfy all the requirements of the specification. If the sample fails in any of the requirements tested other than Azadirachtin content and Emulsion stability, the entire control unit represented by the sample shall be considered as unfit for the purpose of marking.

5.2.2 In case the sample taken from the control unit fails in either Azadirachtin Content or Emulsion stability, or both, the entire material may be suitably reprocessed and the defect rectified. Such reprocessed material, when tested again shall satisfy all the requirements of specification.

**6. REJECTIONS**–Disposal of non-conforming product shall be done in such a way so as to ensure that there is no violation of provisions of BIS Act, 2016.

**TABLE 1**  
**LEVELS OF CONTROL**

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required (or)S: Sub-contracting permitted	Levels of Control		
Cl.	Requirement	Test method with clause ref.	Test method ISS		No. of Sample	Frequency	Remarks
3.2.1	Description	3.2.1	IS 14300	R	1	Each control unit	Please see clause 5.2.1 of SIT
3.2.2	Cold Test	13.1	IS 6940	R	1	Each control unit	-do-
3.2.3	Flash point	-	IS 1448 Pt 20	R	1	Each control unit	-do-
3.2.4	Emulsion stability	13.3	IS 6940	R	1	Each control unit	Please see clause 5.2.2 of SIT
3.3.1	Azadirachtin Content	Annex A	IS 14300	R	1	Each control unit	-do-
3.3.2	Acidity/ Alkalinity	13.5	IS 6940	R	1	Each control unit	Please see clause 5.2.1 of SIT
3.3.3	Aflatoxin Content	Annex B	IS 14299	R	1	Each control unit	-do-

Note-1: Levels of control given in column 3 are only recommendatory in nature. The manufacturer may define the control and submit his own levels of control in column 3 with proper justification for approval by BO Head.

Note-2: Whether test equipment is required or sub-contracting is permitted in column 2 shall be decided by the Bureau and shall be mandatory. Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empaneled by the Bureau.